

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ADVANCED SILICON TECHNOLOGIES, LLC, :
Plaintiff, :

v. :

Civil Action No. :

HARMAN INTERNATIONAL INDUSTRIES :
INCORPORATED, HARMAN BECKER :
AUTOMOTIVE SYSTEMS, INC., AND :
HARMAN BECKER AUTOMOTIVE SYSTEMS :
GMBH, :
Defendants. :

Jury Trial Demanded

COMPLAINT FOR PATENT INFRINGEMENT

Advanced Silicon Technologies, LLC (“Advanced Silicon” or “Plaintiff”), brings this action for patent infringement against Defendants Harman International Industries Incorporated, Harman Becker Automotive Systems, Inc., and Harman Becker Automotive Systems GmbH (“Harman” or “Defendants”), and alleges as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement under the patent laws of the United States, Title 35 of the United States Code. Advanced Silicon seeks remedies for Defendants’ infringement of Advanced Silicon’s U.S. Patent Nos. 6,339,428 (“the ’428 Patent”), 6,546,439 (“the ’439 Patent”), 6,630,935 (“the ’935 Patent”), and 8,933,945 (“the ’945 Patent”) (collectively, the “Patents-in-Suit”).

THE PARTIES

2. Advanced Silicon is a Delaware limited liability company, with a principal place of business at 118 Maplewood Avenue Unit C-2/Box 8, Portsmouth, NH 03801.

3. Upon information and belief, Harman International Industries, Inc. is a Delaware corporation headquartered at 400 Atlantic Street, Stamford, CT 06901.

4. Upon information and belief, Harman Becker Automotive Systems, Inc. is a Delaware corporation headquartered at 39001 West Twelve Mile Road Farmington Hills, MI 48331.

5. Upon information and belief, Harman Becker Automotive Systems GmbH is a corporation organized and existing under the laws of Germany, with its principal place of business at Becker-Goring-Strasse 16, Karlsbad, 76307 Germany.

JURISDICTION AND VENUE

6. This action arises under the Patent Act, 35 U.S.C. § 1 *et seq.*

7. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338.

8. Venue in this district is proper under 28 U.S.C. §§ 1400(b) and 1391(b) and (c).

9. This Court has personal jurisdiction over Harman by virtue of, *inter alia*, (i) being incorporated in this jurisdiction; (ii) committing at least a portion of the infringements alleged herein within this district; and (iii) regularly doing business or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from good and services provided to individuals in this district.

THE PATENTS

10. United States Patent No. 6,339,428 is entitled “Method and Apparatus for Compressed Texture Caching in a Video Graphics System,” and issued January 15, 2002 to inventors Mark C. Fowler, Paul Vella, and Michael T. Wright. The ’428 Patent issued from

United States Patent Application No. 09/356,398 filed on July 16, 1999. A copy of the '428 Patent is attached hereto as Exhibit A.

11. United States Patent No. 6,546,439 is entitled "Method and System for Improved Data Access," and issued April 8, 2003 to inventors Geoffrey S. Strongin and Qadeer A. Qureshi. The '439 Patent issued from United States Patent Application No. 09/207,970 filed on December 9, 1998. A copy of the '439 Patent is attached hereto as Exhibit B.

12. United States Patent No. 6,630,935 is entitled "Geometric Engine Including a Computational Module for use in a Video Graphics Controller," and issued October 7, 2003 to inventors Ralph Clayton Taylor, Michael Andrew Mang, and Michael Mantor. The '935 Patent issued from United States Patent Application No. 09/556,474 filed on April 21, 2000. A copy of the '935 Patent is attached as Exhibit C.

13. United States Patent No. 8,933,945 is entitled "Dividing Work Among Multiple Graphics Pipelines Using a Super-Tiling Technique," and issued January 13, 2015 to inventors Mark M. Leather and Eric Demers. The '945 Patent issued from United States Patent Application No. 10/459,797 filed on June 12, 2003. The '945 Patent claims priority to U.S. provisional application serial number 60/429,641 filed on November 27, 2002. A copy of the '945 Patent is attached as Exhibit D.

14. Advanced Silicon is the lawful assignee and owner of all right, title and interest in and to the '428 Patent, the '439 Patent, the '935 Patent, and the '945 Patent.

INFRINGEMENT OF THE PATENTS-IN-SUIT

15. Harman has infringed and continues to infringe at least four of Advanced Silicon's patents that cover important aspects of automotive infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other

computing and graphics-capable electronic devices, and automobiles containing such components, including, at least, automotive assemblies containing one or more microprocessors and/or graphics processors and other products containing the same, including without limitation, head units, infotainment systems, and digital dashboards. (the “Exemplary Harman Products”).

16. Advanced Silicon incorporates by reference in its allegations herein certain claim charts comparing the exemplary independent claims of the Patents-in-Suit to certain Exemplary Harman Products which include automotive infotainment systems.

17. Specifically, Exhibits E through K are charts comparing the exemplary independent claims of the Patents-in-Suit to the BMW i8 Infotainment and the 428i Infotainment systems, which include Harman head units, and BMW vehicles containing the same.

18. Exhibits E, G, H, and J include charts comparing the independent claims of the Patents-in-Suit to the BMW 428i Infotainment system, which includes a Harman NBT EVO HU head unit, and 2015 BMW 428i vehicles containing the same. Exhibits F, G, I and K include charts comparing the independent claims of the Patents-in-Suit to the BMW i8 Infotainment system, which includes a Harman NBT HU head unit, and 2015 BMW i8 vehicles containing the same. Exhibits L and M include photographs of the BMW 428i and i8 Infotainment systems and demonstrate that these devices incorporate Harman NBT EVO HU and NBT HU head units respectively. As set forth in these charts, the Harman head units provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the Patents-in-Suit. Advanced Silicon believes that the Harman head units are exemplary of numerous other products made, used, sold, imported, and offered for sale by Harman because such other products feature the same or substantially similar infringing functionality. Accordingly, on information

and belief, numerous other devices that infringe the claims of the Patents-in-Suit have been made, used, sold, imported, and offered for sale by Harman and/or its customers.

COUNT I
(Harman's Infringement of the '428 Patent)

19. Paragraphs 1 through 18 are incorporated by reference as if fully restated herein.

20. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '428 Patent.

21. The '428 Patent is valid and enforceable.

22. Harman has infringed, and is still infringing, the '428 Patent in at least this District by making, using, offering to sell, selling and/or importing the Exemplary Harman Products that infringe at least exemplary claims 1-6, 8-9, 10-14, 16-17, and 25-29 of the '428 Patent (the "Exemplary '428 Patent Claims") literally or by the doctrine of equivalence. For example, the Exemplary Harman Products including the Harman NBT HU and NBT EVO HU head units and other similar devices directly infringe the Exemplary '428 Patent Claims.

23. On information and belief, Harman directly infringes, and is contributing to and/or inducing the infringement of the '428 Patent by, at least, BMW in the 2015 BMW 428i Infotainment system. On information and belief, Harman designs, manufactures, and sells the Exemplary Harman Products which directly infringe and, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '428 Patent. Harman actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce infringement of the '428 Patent by designing, manufacturing and selling the Exemplary Harman Products, for example but without limitation, head units, which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '428 Patent. There are no substantial noninfringing uses of the Exemplary Harman Products.

Harman knows and intends that the Exemplary Harman Products will be used in their ordinary and customary manner for their intended purpose, namely to facilitate graphics rendering, as evidenced by at least product literature distributed in connection with the subject products by Harman.

24. Prior to the filing of this complaint, Harman had actual knowledge of the '428 Patent and that its Exemplary Harman Products and the products incorporating them are imported into, sold, offered for sale, and used in the United States. *See* Exhibit N, Letter to Harman dated December 18, 2015.

25. In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, Harman also had knowledge that use of the Exemplary Harman Products in devices by, among others, BMW, and the use by consumers of the devices into which such the Exemplary Harman Products are incorporated, in the customary and intended manner, is likely to infringe the '428 Patent. *See* Exhibit N, Letter to Harman dated December 18, 2015. On information and belief, Harman has continued to sell the Exemplary Harman Products and distribute product literature and website materials inducing BMW, and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '428 Patent.

26. Exhibits E and F include charts comparing independent claims 1, 10, and 25 of the '428 Patent to the BMW 428i and i8 Infotainment systems, which include Harman NBT EVO HU and NBT HU head units, and BMW vehicles containing the same. As set forth in these charts, the Exemplary Harman Products provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '428 Patent. Accordingly, the

Exemplary Harman Products incorporated in the charted systems are covered by elements of at least claims 1, 10, and 25 of the '428 Patent.

27. Advanced Silicon is entitled to recover damages adequate to compensate for Harman's infringement.

COUNT II
(Harman's Infringement of the '439 Patent)

28. Paragraphs 1 through 27 are incorporated by reference as if fully restated herein.

29. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '439 Patent.

30. The '439 Patent is valid and enforceable.

31. Harman has infringed, and is still infringing, the '439 Patent in at least this District by making, using, offering to sell, selling and/or importing Exemplary Harman Products that infringe at least claims 1 – 11, and 14 – 16 of the '439 Patent (the "Exemplary '439 Patent Claims") literally or by the doctrine of equivalence. For example, the Exemplary Harman Products, including Harman NBT HU and NBT EVO HU head units, and BMW vehicles containing the same, infringe the Exemplary '439 Patent Claims.

32. On information and belief, Harman directly infringes, and is contributing to and/or inducing the infringement of the '439 Patent by, at least, BMW in the 2015 BMW 428i and BMW i8 Infotainment systems. On information and belief, Harman designs, manufactures, and sells the Exemplary Harman Products which directly infringe and, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '439 Patent. Harman actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce infringement of the '439 Patent by manufacturing and selling the Exemplary Harman Products, which if used for their normal and intended purpose, to facilitate

computing and graphics lead to direct infringement of the invention claimed in the '439 Patent. There are no substantial noninfringing uses of these the Exemplary Harman Products. Harman knows and intends that the Exemplary Harman Products will be used in their ordinary and customary manner for their intended purpose, namely to facilitate graphics rendering, as evidenced by at least product literature distributed in connection with the subject products by Harman.

33. Prior to the filing of this complaint, Harman had actual knowledge of '439 Patent and that the Exemplary Harman Products and the products incorporating them are imported into, sold, offered for sale, and used in the United States. *See* Exhibit N, Letter to Harman dated December 18, 2015.

34. In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, Harman also had knowledge that use of the Exemplary Harman Products in devices by, among others, BMW, and the use by consumers of the devices into which such Exemplary Harman Products are incorporated, in the customary and intended manner, is likely to infringe the '439 Patent. *See* Exhibit N, Letter to Harman dated December 18, 2015. On information and belief, Harman has continued to sell the Exemplary Harman Products and distribute product literature and website materials inducing BMW, and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '439 Patent.

35. Exhibits G includes a chart comparing independent claim 1 of the '439 Patent to the BMW 428i and i8 Infotainment systems, which include Harman NBT EVO HU and NBT HU head units, and BMW vehicles containing the same. As set forth in these charts, the Exemplary Harman Products provide circuitry and functionality that practices, in whole or in

material part, the technology claimed by the '439 Patent. Accordingly, the Exemplary Harman Products incorporated in the charted systems are covered by elements of at least claim 1 of the '439 Patent.

36. Advanced Silicon is entitled to recover damages adequate to compensate for Harman's infringement.

COUNT III
(Harman's Infringement of the '935 Patent)

37. Paragraphs 1 through 35 are incorporated by reference as if fully restated herein.

38. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '935 Patent.

39. The '935 Patent is valid and enforceable.

40. Harman has infringed, and is still infringing, the '935 Patent in at least this District by making, using, offering to sell, selling and/or importing the Exemplary Harman Products that infringe at least claims 1, 2, and 4 – 8 of the '935 Patent (the "Exemplary '935 Patent Claims") literally or by the doctrine of equivalence. For example, the Exemplary Harman Products, which include Harman NBT EVO HU and NBT HU head units, infringe the Exemplary '935 Patent Claims.

41. On information and belief, Harman directly infringes, and is contributing to and/or inducing the infringement of the '935 Patent by, at least, BMW as seen in the BMW 428i Infotainment system and the BMW i8 Infotainment system and BMW vehicles containing the same. On information and belief, Harman designs, manufactures, and sells the Exemplary Harman Products which directly infringe and, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '935 Patent. Harman actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce

infringement of the '935 Patent by manufacturing and selling the Exemplary Harman Products which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '935 Patent. There are no substantial noninfringing uses of the Exemplary Harman Products. Harman knows and intends that the Exemplary Harman Products will be used in their ordinary and customary manner for their intended purpose, namely to facilitate graphics rendering, as evidenced by at least product literature distributed in connection with the subject products by Harman.

42. Prior to the filing of this complaint, Harman had actual knowledge of the '935 Patent and that the Exemplary Harman Products and the products incorporating them are imported into, sold, offered for sale, and used in the United States. *See* Exhibit N, Letter to Harman dated December 18, 2015.

43. In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, Harman also had knowledge that use of the Exemplary Harman Products in devices by, among others, BMW, and the use by consumers of the devices into which such Exemplary Harman Products are incorporated, in the customary and intended manner, infringes the '935 Patent. *See* Exhibit N, Letter to Harman dated December 18, 2015. On information and belief, Harman has continued to sell the Exemplary Harman Products and distribute product literature and website materials inducing BMW, and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '935 Patent.

44. Exhibits H and I include charts comparing exemplary independent claim 1 of the '935 Patent to the BMW 428i and BMW i8 Infotainment system, which include Harman NBT EVO HU and NBT HU head units, and 2015 BMW 428i and BMW i8 vehicles containing the

same. As set forth in these charts, the Exemplary Harman Products provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. Accordingly, the Exemplary Harman Products incorporated in the charted systems satisfy one or more elements of claim 1 of the '935 Patent.

45. Advanced Silicon is entitled to recover damages adequate to compensate for Harman's infringement.

COUNT IV
(Harman's Infringement of the '945 Patent)

46. Paragraphs 1 through 44 are incorporated by reference as if fully restated herein.

47. Advanced Silicon is the assignee and lawful owner of all right, title and interest in and to the '945 Patent.

48. The '945 Patent is valid and enforceable.

49. Harman has infringed, and is still infringing, the '945 Patent in at least this District by making, using, offering to sell, selling and/or importing products that infringe at least claims 1 – 11 and 21 of the '945 Patent (the "Exemplary '945 Patent Claims") literally or by the doctrine of equivalence. For example, the Exemplary Harman Products, Harman Tegra Series integrated circuits, the Harman Shield, and the which including the Harman NBT HU and NBT EVO HU head units, infringe the Exemplary '945 Patent Claims.

50. On information and belief, Harman directly infringes, and is contributing to and/or inducing the infringement of the '945 Patent by, at least, BMW as seen in the 2015 BMW 428i Infotainment system. On information and belief, Harman designs, manufactures, and sells one or more Exemplary Harman Product which, if used for their normal and intended purpose, lead to direct infringement of the invention claimed in the '945 Patent. Harman actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally

induce infringement of the '945 Patent by manufacturing and selling the Exemplary Harman Products which if used for their normal and intended purpose lead to direct infringement of the invention claimed in the '945 Patent. There are no substantial noninfringing uses of these Exemplary Harman Products. Harman knows and intends that the Exemplary Harman Products will be used in their ordinary and customary manner for their intended purpose, namely to facilitate graphics rendering, as evidenced by at least product literature distributed in connection with the subject products by Harman.

51. Prior to the filing of this complaint, Harman had actual knowledge of the '945 Patent and that the Exemplary Harman Products and the products incorporating them are imported into, sold, offered for sale, and used in the United States. *See* Exhibit N, Letter to Harman dated December 18, 2015.

52. In addition to actual knowledge of the '945 Patent, prior to the filing of this complaint, Harman also had knowledge that use of its Exemplary Harman Products in devices by, among others, BMW and the use by consumers of the devices into which such Exemplary Harman Products are incorporated, in the customary and intended manner, infringes the '945 Patent. *See* Exhibit N, Letter to Harman dated December 18, 2015. On information and belief, Harman has continued to sell the Exemplary Harman Products and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '945 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '945 Patent.

53. Exhibits J and K include charts comparing exemplary independent claims 1 and 21 of the '945 Patent to the BMW 428i and BMW i8 Infotainment system, which include Harman NBT EVO HU and NBT HU head units, and 2015 BMW 428i and 2015 BMW i8

vehicles containing the same. As set forth in the charts, the Exemplary Harman Products provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '945 Patent. Accordingly, the Exemplary Harman Products incorporated in the charted systems satisfy one or all elements of claims 1 and 21 of the '945 Patent.

54. Advanced Silicon is entitled to recover damages adequate to compensate for Harman's infringement.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the following relief:

- a) A judgment that the '428 Patent, the '439 Patent, the '935 Patent, and the '945 Patent are valid and enforceable.
- b) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '428 Patent;
- c) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '439 Patent;
- d) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '935 Patent;
- e) A judgment that Defendants have infringed, contributorily infringed, and/or induced infringement of one or more claims of the '945 Patent; and
- g) A judgment that awards Plaintiff all appropriate damages under 35 U.S.C. § 284 for Defendants' past infringement, and any continuing or future infringement of the Patents-in-Suit, up until the date such judgment is entered, including pre or post judgment

interest, costs, and disbursements as justified under 35 U.S.C. § 284 and, if necessary, to adequately compensate Plaintiff for Defendants' infringement, an accounting:

- i. that this case be declared exceptional within the meaning of 35 U.S.C. § 285 and that Plaintiff be awarded its reasonable attorneys' fees against Defendants that it incurs in prosecuting this action;
- ii. that Plaintiff be awarded costs, and expenses that it incurs in prosecuting this action; and
- iii. that Plaintiff be awarded such further relief at law or in equity as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands trial by jury on all claims and issues so triable.

Dated: December 21, 2015

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